

Advanced Algebra

Date _____

Name

Key

Refer to p. 5 for problems 1-5.

1a) Define Rational Numbers. A rational number can be expressed as $\frac{a}{b}$ where a & b are real numbers.

b) Some examples of rational numbers are 3, 4.5, $\frac{1}{2}$, -3

2a) Define Irrational Numbers.

An irrational number is a decimal that is nonterminating and non-repeating.

b) Some examples of irrational numbers are π , $\sqrt{17}$

3. The set of counting numbers is { 1, 2, 3, 4... }

4. The set of whole numbers is { 0, 1, 2, 3... }

5. The set of integers is { ... -3, -2, -1, 0, 1, 2... }

6. Simplify. (Example: $\sqrt{100} = 10$ because $10^2 = 100$.)

a. $\sqrt{16} = 4$

b. $\sqrt{25} = 5$

c. $\sqrt{81} = 9$

d. $\sqrt{64} = 8$

7. 16, 25, 64, and 81 are called perfect squares. Write the first 10 perfect squares.

1, 4, 9, 16, 25, 36, 49, 64, 81, 100

8. Write each number as the product of a perfect square and another number. Use the largest perfect square.

a. $12 = 4 \cdot 3$

b. $20 = 4 \cdot 5$

c. $90 = 9 \cdot 10$

d. $27 =$

e. $54 = 9 \cdot 6$

f. $36 = 6 \cdot 6$